



Monitoring and Predicting the El Niño-Southern Oscillation at NOAA/CPC

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NOAA Climate Prediction Center

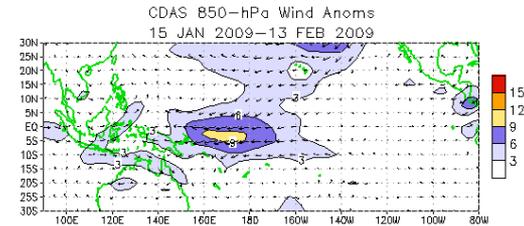
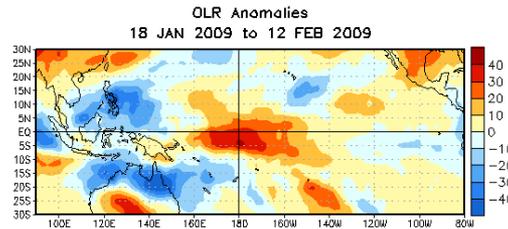
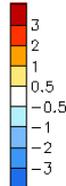
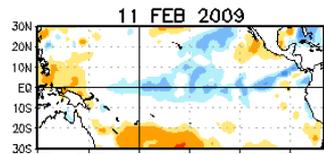
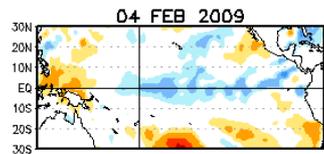
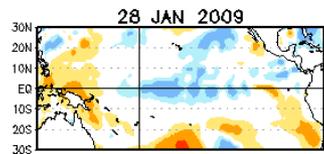
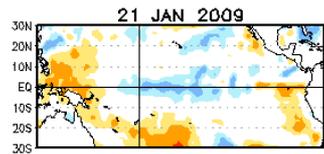
26 January 2010



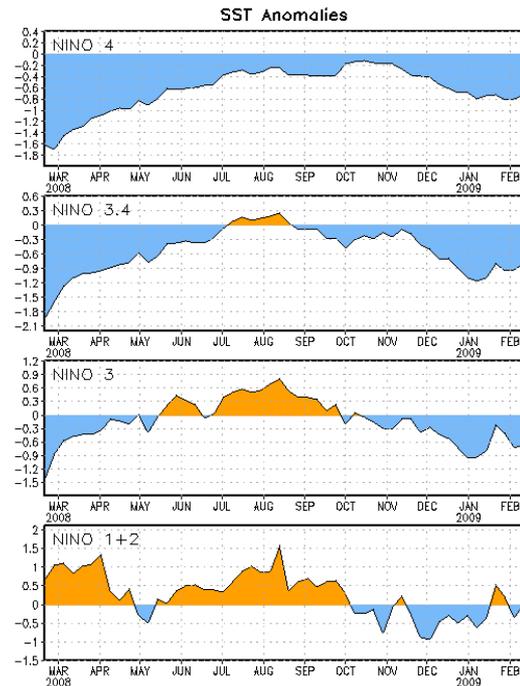
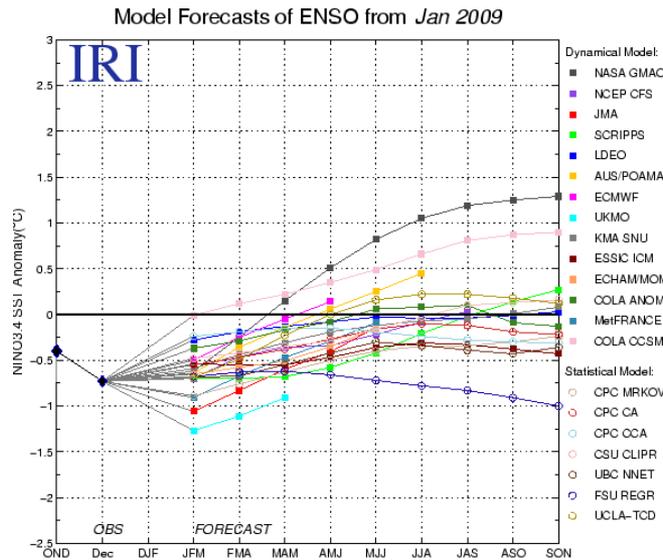
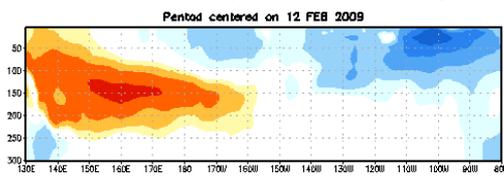
Weekly and Monthly ENSO Updates

- A collaborative effort across NOAA: input data from NCDC, IRI, NCEP, NDBC
- Periodic updates: **Weekly ENSO Update** is (every Monday) and a **Monthly ENSO Diagnostics Discussion** (Thursday between 4th-11th of each month)

Weekly SST Anomalies (DEG C)



EQ. Subsurface Temperature Anomalies (deg C)





ENSO Alert System

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by
CLIMATE PREDICTION CENTER/NCEP
5 November 2009

ENSO Alert System Status: [El Niño Advisory](#)

[Spanish Version](#)

Synopsis: El Niño is expected to continue strengthening and last through at least the Northern Hemisphere winter 2009-2010.

During October 2009, sea surface temperature (SST) anomalies increased across the central and eastern equatorial Pacific Ocean (Fig. 1 & Fig. 2). The Niño-3.4 index increased nearly a degree with the most recent weekly value at +1.5°C (Fig. 2). Above-average subsurface temperature anomalies increased across a large region of the central and east-central Pacific, with anomalies ranging between +1 to +5°C by the end of the month (Fig. 3). Consistent with this warming, subsurface oceanic heat content anomalies (average departures in the upper 300m of the ocean, Fig. 4) also increased during the month. In addition, low-level westerly and upper-level easterly wind anomalies strengthened over much of the equatorial Pacific. The pattern of tropical convection also remained consistent with El Niño, with enhanced convection over the west-central Pacific and suppressed convection over Indonesia. Collectively, these oceanic and atmospheric anomalies reflect a strengthening El Niño.

There continues to be disagreement among the models on the eventual strength of El Niño, but the majority indicate that the three-month average Niño-3.4 SST index value will range between +1.0°C and +1.5°C during the Northern Hemisphere winter (Fig. 5). Consistent with the historical evolution of El Niño, a peak in SST anomalies is expected sometime during November-January. At this time, there is a high degree of uncertainty over how long this event will persist. Most of the models suggest that this event will last through March-May 2010, although the most likely outcome is that El Niño will peak at least at moderate strength (3-month Niño-3.4 SST index of +1.0°C or greater) and last through at least the Northern Hemisphere winter 2009-10.

Expected El Niño impacts during November 2009-January 2010 include enhanced precipitation over the central tropical Pacific Ocean and a continuation of drier-than-average conditions over Indonesia. For the contiguous United States, potential impacts include above-average precipitation for Florida, central and eastern Texas, and California, with below-average precipitation for parts of the Pacific Northwest. Above-average temperatures and below-average snowfall is most likely for the Northern Rockies, Northern Plains, and Upper Midwest, while below-average temperatures are expected for the southeastern states.

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts for the evolution of El Niño/La Niña are updated monthly in the [Forecast Forum](#) section of CPC's

User can click on status to get detailed information on Alert System definitions

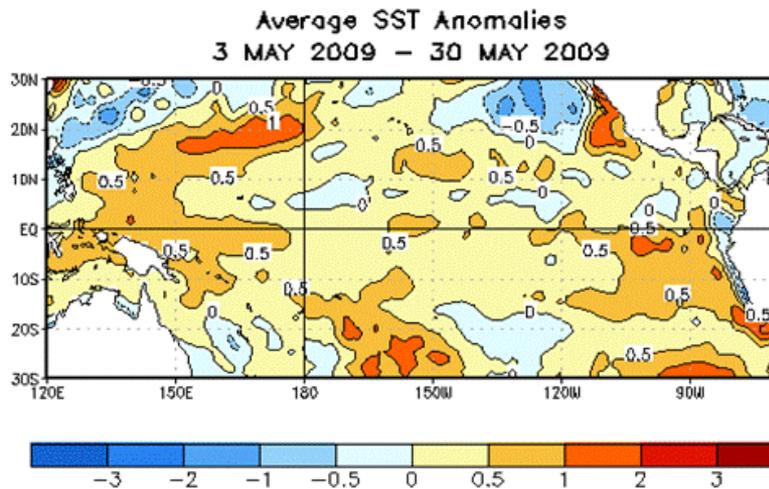
http://www.cpc.noaa.gov/products/analysis_monitoring/enso_advisory/index.shtml



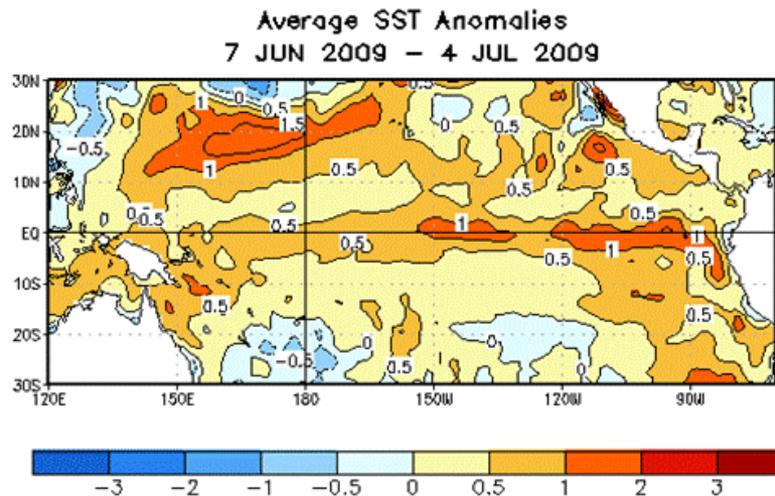
An example from earlier this year



June 4th ENSO
discussion:
El Niño Watch



July 9th ENSO
discussion:
El Niño Advisory



Since July 2009, an **El Niño Advisory** has been in place.



How the Monthly ENSO Discussion is Distributed



- Discussion is immediately emailed to a 7,500+ listserv (includes technical experts, general public, etc.).
- Within hours, NOAA posts a press release (if applicable) and articles will appear on media outlets (Reuters, AP, etc.)
- Interviews with radio, TV, newspapers, blogs....

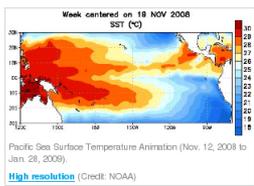


NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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NOAA Unveils New Alert System for La Niña and El Niño
La Niña Likely to Continue into Spring
February 5, 2009

NOAA's Climate Prediction Center today issued the first La Niña advisory under its new El Niño Southern Oscillation (ENSO) Alert System. Forecasters expect La Niña to influence weather patterns across the United States during the remainder of the winter and into the early spring.



Pacific Sea Surface Temperature Animation (Nov. 12, 2008 to Jan. 28, 2009).
High resolution (Credit: NOAA)

Defined as cooler than normal sea surface temperatures in the central and eastern equatorial Pacific Ocean, La Niña impacts the weather globally. La Niña's opposite is El Niño, or warmer than normal ocean temperatures. These changes in ocean temperatures alter the tropical wind and rainfall patterns with far reaching implications.

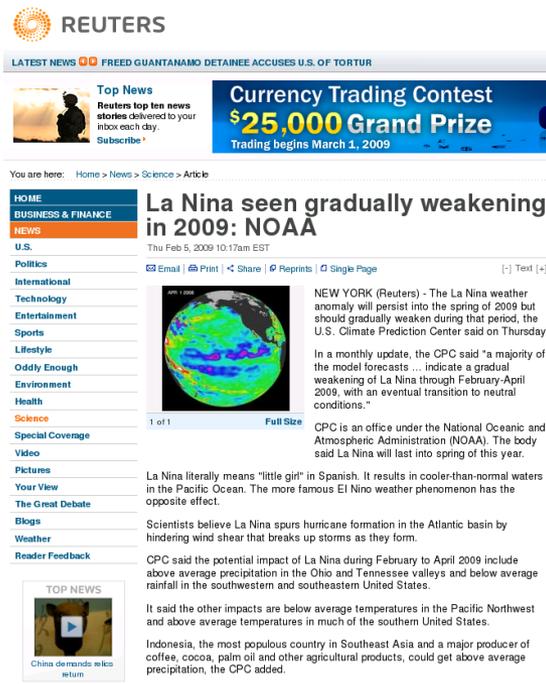
"The typical weather patterns associated with La Niña and El Niño affect many industries including agriculture, transportation, energy, shipping and construction," said Michael S. Halpert, deputy director of the Climate Prediction Center. "The ENSO Alert System will succinctly inform industry, government agencies, academia and the public about the onset and status of La Niña and El Niño. This system will also help decision makers plan for the potential effects presented by these conditions."

La Niña conditions have been present since late December, but it is too early to say exactly how strong the event will be and precisely how long it will last. However, for the next few months La Niña is expected to bring milder and drier than average conditions to the southeastern and southwestern states. It is also expected to bring wetter-than-average conditions to the Ohio and Tennessee valleys, and cooler than average temperatures to the Pacific Northwest.

The new ENSO alert system includes La Niña and El Niño watches and advisories which the Climate Prediction Center will issue when specific conditions exist.

- **La Niña or El Niño Watch:** conditions in the equatorial Pacific are favorable for the development of La Niña or El Niño conditions in the next three months.
- **La Niña or El Niño Advisory:** La Niña or El Niño conditions have developed and are expected to continue.

These watches and advisories are now part of the ENSO Diagnostic Discussion, which is issued by the Climate Prediction Center on the Thursday falling between the 5th and 11th of every month. It is available



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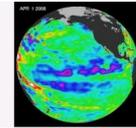
Currency Trading Contest
\$25,000 Grand Prize
Trading begins March 1, 2009

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La Niña seen gradually weakening in 2009: NOAA
Thu Feb 5, 2009 10:17am EST

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NEW YORK (Reuters) - The La Niña weather anomaly will persist into the spring of 2009 but should gradually weaken during that period, the U.S. Climate Prediction Center said on Thursday.

In a monthly update, the CPC said "a majority of the model forecasts ... indicate a gradual weakening of La Niña through February-April 2009, with an eventual transition to neutral conditions."

CPC is an office under the National Oceanic and Atmospheric Administration (NOAA). The body said La Niña will last into spring of this year.

La Niña literally means "little girl" in Spanish. It results in cooler-than-normal waters in the Pacific Ocean. The more famous El Niño weather phenomenon has the opposite effect.

Scientists believe La Niña spurs hurricane formation in the Atlantic basin by hindering wind shear that breaks up storms as they form.

CPC said the potential impact of La Niña during February to April 2009 include above average precipitation in the Ohio and Tennessee valleys and below average rainfall in the southwestern and southeastern United States.

It said the other impacts are below average temperatures in the Pacific Northwest and above average temperatures in much of the southern United States.

Indonesia, the most populous country in Southeast Asia and a major producer of coffee, cocoa, palm oil and other agricultural products, could get above average precipitation, the CPC added.

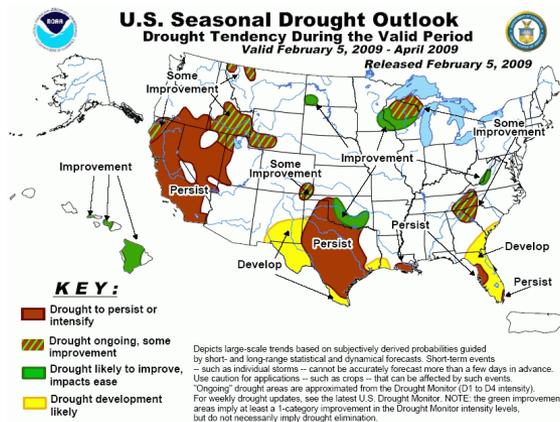
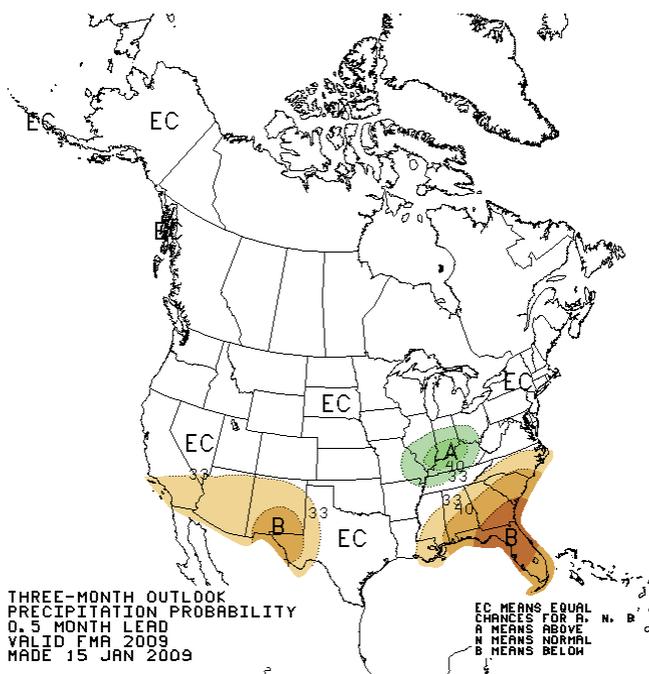
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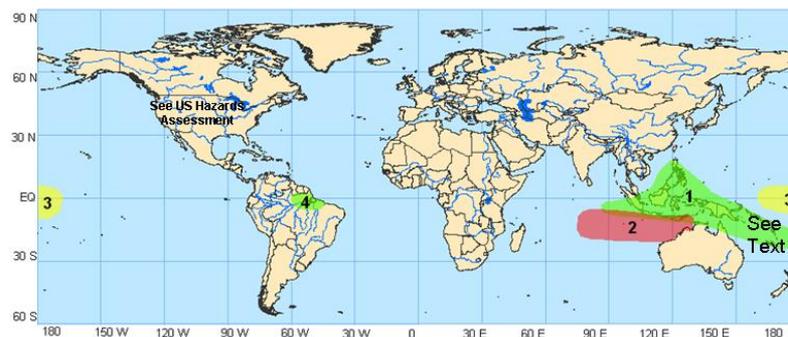
ENSO in other CPC and External Products



- Input from ENSO discussion is incorporated into other CPC products and services: [Seasonal and Monthly Outlooks](#), [Drought Outlook](#), [Fire Potential conference call](#), [U.S. and Global Hazards](#)....
- Also used by external users for input into more tailored discussions : [WWA Intermountain Climate Summary](#), [Pacific ENSO Update](#), [Island Climate Update](#), [WMO El Nino and La Nina Update](#), [Western Australia Department of Agriculture and Food](#) ...



Week 1 Outlook – Valid: February 17 - 23, 2009





Questions? Comments?